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Citation for final published version:

Morgan, Eric R, Atenstaedt, Robert, Betson, Martha, Bichard, Jo-Anne, Cable, Joanne ORCID: <https://orcid.org/0000-0002-8510-7055>, Pearson, Chris, Roberts, Daniel, Turner, Katy and Watson, Debbie 2018. Getting to the bottom of toxocariasis prevention. Public Health 165 , pp. 152-153.  
10.1016/j.puhe.2018.06.017 file

Publishers page: <https://doi.org/10.1016/j.puhe.2018.06.017>  
<<https://doi.org/10.1016/j.puhe.2018.06.017>>

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## Getting to the bottom of toxocariasis prevention

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In last month's issue of *Public Health*, Black and colleagues present evidence for a deepening disparity in childhood obesity between the most and least deprived children in the United Kingdom, and call for research into why this might be.<sup>1</sup> While the reasons are no doubt complex and multifactorial, available spaces for outdoor play in more deprived areas, and their attractiveness or otherwise, might be an important factor. Specifically, areas heavily contaminated with dog faeces can dissuade people, including children and other vulnerable individuals, from taking outdoor exercise.<sup>2</sup> A low level of physical activity is a major contributor to childhood obesity and related adverse health outcomes, while outdoor play has many health and social benefits.<sup>3</sup>

Pollution from dog faeces, of course, has health impacts beyond the consequences of discouraging exercise. Recent months have seen a re-emergence of interest in toxocariasis as a public health issue, with new information on the concealed impacts of infection, such as on human cognitive ability.<sup>4</sup> We agree with the emerging consensus that greater awareness among clinicians, more thorough investigation of pulmonary and cognitive presentations, and improved diagnosis are all needed to reveal the true health consequences of this disease, and to build public understanding and support for counter-measures.<sup>5</sup> Nevertheless, while the crucial role of public area contamination with dog faeces in the epidemiology of toxocariasis is well accepted, solutions for tackling it remain elusive and under-studied.

Dog fouling is recognised as undesirable and anti-social, and illegal in many jurisdictions, yet it persists. The evidence base for its effective reduction was highlighted in this journal some seven years ago as woefully limited.<sup>6</sup> This deficit has not been rectified in the intervening years. A new approach that recognises the full spectrum of negative impacts associated with dog fouling, and the underlying social and psychological issues enabling its persistence, is urgently needed. Toxocariasis, like obesity, is more common in deprived communities, in the UK and globally.<sup>5</sup> Inaction against dog fouling is conflated with perception of poor neighbourhood quality, and lack of empowerment for positive change. Yet social action increasingly arises spontaneously, often co-ordinated through social media, and can be

effective. A recent public engagement project in Bristol, UK, invited school pupils to spray educational messages around instances of dog fouling, with local authority support, and led to a 60% reduction in the rate of dog fouling after a single day's activity (Figure). This showed that positive community action can succeed where decades of legislation has failed. How to sustain such impact in the longer term, however, is more difficult, and requires deeper interdisciplinary understanding. Currently, durable behaviour change among dog owners has stalled, as evidenced by high levels of public irritation and concern around fouling, but solid evidence on which to base new strategies is not available.

The persistence of dog fouling and increasing knowledge of its pervasive clinical and sub-clinical effects, should therefore open a wider discourse that includes perspectives on the history of dog fouling, cultural influences on disgust, education and motivation for change, social responsibility, and urban design. Public health professionals have a crucial role to play, not least by taking this disease seriously despite the limitations of current diagnostic modalities and the lack of formal disease surveillance, and by lending their respected voice to efforts taken against dog fouling for the improvement of public health. Understanding the wider socio-psychological context of dog fouling is essential to the success of efforts to reduce public area contamination with dog faeces, and its effects on infection risk and obesity.

We declare no competing interests.

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**Figure:** Estimated rate of new depositions of dog faeces per week, in the vicinity of six schools in Bristol, UK, before and 1-4 weeks after intervention. Schoolchildren drew attention to the problem by spray-painting simple messages adjacent to instances of dog fouling, encouraging dog owners to take responsibility for their dogs' faeces (www.teampoopatrol.com).

